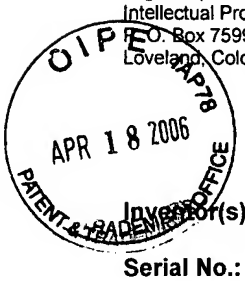
AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, Colorado 80537-0599

ATTORNEY DOCKET NO. **10004278-1**



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Mikes, et al.

Serial No.: 10/685,270 **Examiner: Hughes, James P.**

Filing Date: October 14, 2003 **Group Art Unit: 2883**

Title: System and Method for Using Concentric Spectrometer to Multiplex or Demultiplex Optical Signals

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria VA 22313-1450

TRANSMITTAL OF REPLY BRIEF

Sir:

Transmitted herewith is the Reply Brief with respect to the Examiner's Answer mailed on February 22, 2006 This Reply Brief is being filed pursuant to 37 CFR 1.193(b) within two months of the date of the Examiner's Answer.

(Note: Extensions of time are not allowed under 37 CFR 1.136(a))

(Note: Failure to file a Reply Brief will result in dismissal of the Appeal as to the claims made subject to an expressly stated new grounds of rejection.)

No fee is required for filing of this Reply Brief.

If any fees are required please charge Deposit Account **50-1078**.

Respectfully submitted,

Mikes, et al.

By _____

Jon E. Holland
Attorney/Agent for Applicant(s)

Reg. No. 41,077

Date: 4/14/2006

Telephone No. (256) 704-3900

☒ I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

Date of Deposit: 4/14/2006

OR

☐ I hereby certify that this paper is being facsimile transmitted to the Commissioner for Patents on the date shown below.

Date of Facsimile:

Typed Name: Shana L. East

Signature: Shana L. East

AF

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of: **Mikes, et al.**			
Serial No.:	10/685,270	Art Unit:	2883
Filed:	October 14, 2003	Examiner:	Hughes, James P.
For:	SYSTEM AND METHOD FOR USING CONCENTRIC SPECTROMETER TO MULTIPLEX OR DEMULTIPLEX OPTICAL SIGNALS	Docket No.:	10004278-1

REPLY BRIEF UNDER 37 C.F.R. §41.41

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Reply Brief under 37 C.F.R. §41.41 is submitted in response to the Examiner's Answer mailed on February 22, 2006.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. §1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to Agilent Technologies, Inc. Deposit Account No. 50-0778.

Certificate of Mailing

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope, with sufficient postage, addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 20231 on

4-14-06

Signature: Shana R. Cost

REMARKS

For at least the reasons set forth in the Appeal Brief filed on November 23, 2005, Applicants respectfully submit that the final rejections of claims 1-9 under 35 U.S.C. §103 are improper and should be withdrawn.

In responding to Applicants' arguments in the Appeal Brief, it is asserted in the Examiner's Answer that "Xiang teaches that concentric spectrometers are well known for their ability to separate hundreds of individual wavelengths of light (spectra) at the same time, while limiting the spatial interaction of adjacent spectra – i.e., crosstalk. (Col. 1, ll. 20-25)." Page 5. Applicants respectfully assert that spatial interaction of the spectra described by *Xiang* does not constitute "crosstalk," as this term is understood by one of ordinary skill in the art. In this regard, as argued in the Appeal Brief, "crosstalk" refers to interference induced by bleeding from a first data channel to a second channel thereby degrading the communication occurring within the second data channel. *Xiang* makes no mention of "crosstalk" or of manipulating any optical data signal, and the inferences by the Examiner that *Xiang* suggests limiting "crosstalk" is a distortion of the teachings of *Xiang*. Indeed, the Examiner has essentially alleged that *Xiang* teaches that concentric spectrometers are "well known" for their ability to limit "crosstalk," yet the Examiner is unable to produce even a single prior art reference that uses a concentric spectrometer for manipulating an optical data signal in any way.

Having failed to find a reference that teaches using a concentric spectrometer to demultiplex a data signal, the Examiner alleges that it would be obvious to combine *Dragone* and *Xiang* essentially because the resulting combination would be an improvement to the existing art. In particular, it is alleged that:

> "The aberration corrected concentric spectrometer of Xiang employs a convex diffraction grating (100) that includes a plurality of curved and typically nonparallel grooves (102) rather than the parallel grooves of a conventional spectrometer (or demultiplexer/multiplexer). Xiang teaches that this design will

> allow greater optical power, which will help prevent each demultiplexed wavelength (spectra) from physically overlapping to adjacent wavelengths on a CCD detector - i.e. it provides aberration correction. (See Col. 2, ll. 58 - Col. 3, ll. 5) Thus, a highly accurate spectral image with greatly improved resolution (i.e. reduced crosstalk) is created. (Col. 1, ll. 44-45)." Page 6.

However, the question under 35 U.S.C. §103 is not whether an alleged combination would have been an improvement of the prior art but rather is whether the teachings of the prior art, without the benefit of Applicants' disclosure, would have fairly suggested the alleged improvement. In this regard, to prevent an improper hindsight-based analysis of the prior art, the Federal Circuit has made it clear that the desirability for combining prior art references must be found in the prior art. "Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application for a showing of the teaching or motivation to combine prior art references." *In re Dembiczcak*, 175 F.3d 994, 50 U.S. P.Q.2d 1614, 1617 (Fed. Cir. 1999). "This court has made it clear, moreover, that an invention will not be denied a patent because it embodies a solution which seems simple and obvious with the benefit of hindsight." *Saf-gard Products, Inc. v. Service Parts, Inc.*, 532 F.2d 1266, 1272, 190 U.S.P.Q. 455 (9th Cir. 1976).

Moreover, the arguments in Examiner's Answer seem to be based on the assumption that suggesting the use of a spectrometer for generating a high resolution spectrum of light from an "image of a scene" necessarily suggests using the same spectrometer to demultiplex optical data signals. However, for at least the reasons set forth above and in the Appeal Brief, Applicants respectfully assert that such an assumption is not sufficiently supported by the cited art.

In addition, the arguments in Examiner's Answer discussed above suggest that utilization of the diffraction grating taught by *Xiang* in the demultiplexer of *Dragone* would be obvious to one of ordinary skill in the art. Even if such allegations are assumed to be true for

the sake of argument, Applicants assert that such a showing is insufficient for rejecting the pending claims under 35 U.S.C. §103.

In this regard, the pending claims recite a "concentric spectrometer." As described by the instant application, a "spectrometer" is "concentric" in the sense that the centers of curvature of a reflective device and a convex diffraction grating are substantially co-located. See Paragraph 20. Thus, merely establishing that it would be obvious to replace the diffraction grating of *Dragone* with the diffraction grating of *Xiang* is insufficient for establishing that such a hypothetical device would constitute a spectrometer that is "concentric."

In maintaining the 35 U.S.C. §103 rejections of the pending claims, it is further asserted in the Examiner's Answer that:

> "Appellant argues that 'the types of light being processed by the router of Dragone and the concentric spectrometer of Xiang are quite different' (page 6, lines 7-8) because 'the 'images' of Xiang, unlike the optical data 'signals' of Dragone, do not usually convey digital data and are not typically transmitted through optical fibers' (page 6, lines 3-4) This argument is not persuasive because while Xiang teaches the demultiplexing of light signals in the visible wavelength spectrum and Dragone teaches data communication signals which typically are not found in the visible spectrum, the spectrometer of Xiang employs a similar (yet improved) diffraction grating as employed by Dragone for free space demultiplexing light signals. One of ordinary skill in the art would have known that the range of wavelengths to be demultiplexed in a particular device is a function of the diffraction grating spacing." Page 6.

However, the relevant issue is not that the light signals of *Xiang* are in a different wavelength range than the light signals of *Dragone*. Rather, the relevant issue is that the device in *Dragone* is not being used for the same purpose relative to the device in *Xiang*. In this regard, the device in *Dragone* is being used to demultiplex optical data signals, whereas the device in *Xiang* is being used to produce a spectrum of light "from a scene." There is no suggestion ***in the cited art*** to use the concentric spectrometer of *Xiang* for demultiplexing optical data signals.

It is further asserted in the Examiner's Answer that:

> "The free space demultiplexing of a light signal (i.e. separating spectra) via a diffraction grating and sending the constituent wavelengths (spectra) to a pixilated CCD detector as taught by Xiang (see Figure 5) is a substantially similar process to the free space demultiplexing of a light signal via a diffraction grating and sending the constituent wavelengths to an optical fiber array in the device of Dragone (see Figure 4)."

The fact that the concentric spectrometer of *Xiang* would demultiplex optical data signals, similar to the grating of *Dragone*, if optical data signals were input to the concentric spectrometer does not mean that it would be obvious to use the concentric spectrometer of *Xiang* for this purpose. In this regard, "(t)he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d 1260, 1266, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992).

Indeed, in *Continental Can Co., USA, Inc. v. Monsanto Co.*, 948 F.2d 1264 (Fed. Cir. 1991), the claimed invention was directed to a ribbed bottom structure for reinforcing a plastic container. A prior art patent disclosed a structure that, when inverted, closely resembled the claimed invention. The Federal Circuit, however, quickly dismissed this simple modification as constituting an obvious change by stating "although a prior art device could have been turned upside down, that did not make the modification obvious unless the prior art fairly suggested the desirability of turning the device upside down." *Continental Can* at 1270. Moreover, when the cited art is properly considered as a whole in the instant case, including considering the manner in which the devices in *Dragone* and *Xiang* are being used, it is apparent that the cited art lacks a sufficient motivation for using the structure of *Xiang* to demultiplex or multiplex optical data signals. Thus, Applicants submit that the alleged motivation for combining *Xiang* and *Dragone* is not based on the teachings of the cited art but is instead based on impermissible hindsight

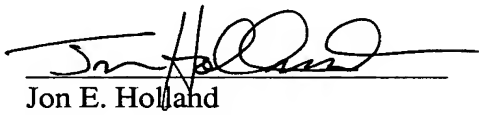
reconstruction of Applicants' invention. Therefore, Applicants respectfully assert that the combination of *Dragone* and *Xiang* is improper.

CONCLUSION

Based on the foregoing discussion and the arguments set forth in the Appeal Brief, Applicants respectfully request that the Examiner's final rejections of claims 1-9 be overruled and withdrawn by the Board, and that the application be allowed to issue as a patent with all pending claims.

Respectfully submitted,

THOMAS, KAYDEN, HORSTEMEYER & RISLEY, L.L.P.

By: 

Jon E. Holland
Reg. No. 41,077
(256) 704-3900 Ext. 103

Agilent Technologies
Legal Department, DL 429
Intellectual Property Administration
P.O. Box 7599
Loveland, Colorado 80537-0599